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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,005	08/06/2003	Roland Gabriel	265-151	7604

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EXAMINER

ISSING, GREGORY C

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/635,005

Applicant(s)

GABRIEL ET AL.

Examiner

Gregory C. Issing

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/14/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040204 +5</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The Information Disclosure Statements of 2/4/04, 8/20/04, 10/13/04, 12/7/04, 12/14/04 and 7/14/05 have been considered with the exception of DE 101 05 150 A! on IDS 8/20/04 since there is no English translation.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the language "preferably in front of a reflector" fails to definitely limit the claimed subject matter. It is unclear if this is supposed to be a limitation or not. As written, the prior art is not required to have a reflector. The language "signals whose intensities can be set differently" is indefinite since it fails to clearly and distinctly set forth the subject matter. Likewise, the language "so that it is possible in this way to set a different angular transmission" fails to definitely and clearly set forth the limitations of the claimed subject matter.

In claim 4, line 4, it is unclear to which "main lobe" this refers. The language "by which means" is not understood, what does the "means" refer to?

In claim 5, the language "4claim 1" is not clearly written, it appears as though the "4" should be cancelled. Claims 6 and 7 are indefinite since there is a lack of proper antecedent basis for "the phase shifter arrangement".

In claim 8 and 9, the "fitting direction" is not understood. IN claim 9, such language lacks a proper antecedent basis.

In claim 9, "and preferably more" as well as "preferably alternately" are indefinite since it is unclear if this is a limitation or not. The language "interleaved in one another" is not understood.

In claim 10, the language "the distance . . . is in the region of half the wavelength" fails to definitely limit the subject matter.

In claim 11, the language "preferably alternately" and "preferably in two fitting directions" and "preferably vertical and horizontal control" are indefinite since they fail to definitely limit the subject matter.

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 2, and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Thourel (2,913,723).

Thourel (2,913,723) discloses a variable pattern antenna including first 2 and second 3 antenna element systems offset with respect to one another in front of a reflector 1 wherein there is inherently a polarization attributed to the transmissions/receptions, wherein the antenna element systems are arranged such that the main lobe of the antenna 2 is directed to low elevations whereas the main lobe of the antenna 3 is directed to high elevations. The feed circuit includes two 3dB hybrid junctions 4, 5, and a variable phase shifter 6, of any suitable type, such that the intensities of signals applied to the first and second antenna elements are relatively changeable such that all energy can be applied solely to the horn 2, solely to the linear array 3, or any combination between the two so as to provide beams in between the two.

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6. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Fink (3,267,472).

Fink discloses a variable aperture antenna system including plural antenna element systems wherein the amplitude relationship of the signals fed to the different antenna elements or segments of the antenna is varied using adjustable power divider means which serve to divert the energy in varying ratios to the various antenna elements without diminishing the total output power, as would be caused by variations in phase relationships, so as to achieve differing beam patterns, enabling the aperture to be uniformly and progressively varied with precise control and accuracy. The beam may be varied in one or two dimensions. Another object is to provide a two-dimensional aperture producing different polarizations along the different axes. Each of the power dividers is capable of variably apportioning the power at any desired ratio between the two output terminals without appreciable attenuation of the power and concurrently maintaining the phase of the signals at the two output terminals constant and in relative phase alignment regardless of the power division.

7. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Itoh (4,667,201).

Itoh disclose an electronic scanning antenna comprising two antenna element systems arranged offset from one another and arranged such that the main lobe of each is squinted with respect to the other such as is known in the prior art (see instant spec. page 1). Moreover, a feed network comprises a variable power divider 16 that provides signals whose intensities are set differently relative to one another so as to change the direction of transmission/reception.

8. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Moh'd Izzat et al (6,922,169).

Moh'd Izzat et al disclose a plurality of antenna element systems 70, 71 and 72 forming a two dimensional array of elements that are offset in the horizontal and vertical directions for generating antenna transmission and reception beams. The beams are inherently transmitted in at least one polarization plane. A feed arrangement includes a power coupler including a differential phase shifter so that each of an azimuth and elevation beam may be separately controlled

9. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Runyon et al (6,864,837).

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Runyon et al disclose the claimed downtilt antenna including a plurality of antenna element systems offset in the vertical direction (Figure 3) or multiple vertical/horizontal columns/rows (5:19-35) for use in a wireless communication base station, hence transmitting and receiving (6:3-6), in a dual-polarization antenna (1:22-24). The feed network comprises a variable power divider, shown in Figure 4 using a hybrid circuit in order to generate adjustable beam downtilt within a range that extends between two boundary beam pointing directions (6:6-19 and 7:10-22).

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicants' admitted prior art in view of Moh'd Izzat et al (6,922,169).

The applicants' admitted prior art, see page 1, lines 9-23 of the instant specification, includes a base station normally having a reflector in front of which a large number of antenna elements are provided which are offset with respect to one another in the vertical direction, and thus form an array, wherein the antenna elements transmit and receive in one or two mutually perpendicular polarizations and may be multiband for example transmitting and receiving in two frequency bands which are offset. The admitted prior art fails to show the at least two antenna element systems arranged such that the main lobes are squinted, i.e. angularly offset, and the network driving the antenna elements includes signals whose intensities are set differently relative to one another. Moh'd Izzat et al teach an antenna system including first and second antenna systems wherein the beam widths and beam angles are independently adjustable using a network including a differential phase shifter coupled to the inputs of a hybrid circuit, the outputs of which are coupled to the antenna elements, such that the control of the differential phase shifter results in different relative intensities being output by the hybrid for driving the antenna elements.

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12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Toman (4,129,870) discloses an antenna system for synthesizing a scanning beam between two extreme values wherein the amplitude of signals to antenna elements are modulated to provide a composite output beam that sequentially scans between the two extreme values. Savarin (3,769,610) discloses an electronic scanning antenna having a voltage controlled variable power divider of known construction wherein it is taught that when the signal at the inputs of a hybrid are in phase, the signals at the outputs are each one-half the input, whereas when the input of one is phase shifted 90 degrees from the other, the signals at the output are maximum at one or the other of the outputs. Runyon (2004/0090286) discloses the specifics of the variable power divider incorporated by reference into the patent to Runyon et al cited above. Kijima et al (5,686,926) discloses a multibeam antenna including a driving network that includes a hybrid circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (571)-272-6973. The examiner can normally be reached on Monday - Thursday 6:00 AM- 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gregory C. Issing
Primary Examiner
Art Unit 3662

gci